

Painted Tile Frieze in Salt-glazed Stoneware. (Doulton & Co.)

COLOURED TERRA-COTTA.

ROYAL ACADEMY LECTURES 1903.—IV.

By Professor AITCHISON, R.A.

PAST PRESIDENT, ROYAL GOLD MEDALLIST.

WHEN one considers that every natural object is coloured by Nature—and mostly beautifully—it seems absurd to object to man's work being coloured too. We have got so accustomed to the want of anything but objectionable colouring on buildings, that beautifully coloured buildings strike most persons as an innovation that they do not like, because for the most part they have rarely seen or noticed such applications before; but, as I showed you in my last lecture, almost all nations up to the time of the Renaissance either used beautifully coloured materials or supplemented them with colour. I know some years ago I was advocating the use of colour on houses and buildings generally to an artist, and he said, "I do not see any other way of making any permanent colour but by pottery, and I doubt if you yourself would like to live in a town where all the buildings were of china"; but I think that if the colour were good I should prefer passing through streets of crockery rather than through those of the present dusty, dingy, and soot-begrimed brick. I must say that the little piece of blue and white tiling over what used to be the margarine shop at the corner of Soho Street was a most agreeable relief to me from the ordinary besmudged brick. It was like a note of joy in the general dreariness.

Enamelled terra-cotta struck the Pisans so forcibly with its beauty that when they had taken Majorca from the Saracens they used the basons and plates they found there to decorate their churches and the fronts of their public buildings. It is from enamelled terra-cotta coming from Majorca that enamelled earthenware was called majolica. Much of the ware of Luca della Robbia that was intended for buildings not only is large in form but is majestically coloured.

Of course I do not desire to see horrible discords of colour spread over all our streets; but the English certainly have some taste for colour, and those who design the coloured fronts should be subject to some controlling colourist to prevent the streets being made more hideous than they now are. There is no reason that I can see why public buildings should not be monumentally coloured.

The simplest and perhaps finest pieces of polychromy I recollect are some of the tombs in the Badia at Florence: the central slab in the upper part of the tomb is generally of dark purple porphyry, and this against the yellowish marble makes a very effective contrast, and gives a dignity and solemnity which the ordinary tombs of white marble do not possess. Most of you have seen that splendid frieze at the Louvre brought by Monsieur Dieulafoy

from the ruins of Darius's palace at Susa. Some of the archers in this frieze have green beards, and when I returned to England after seeing this frieze in Paris, before it found a permanent resting-place in the Louvre, an English gentleman in the train got into conversation with me, and we talked about these works of art found amongst the ruins at Susa, and I mentioned that the beards of the archers were green, and was instancing it as



FIG. 1.—INDIAN TILE : PINK, WHITE, GREEN, GOLD, ON AZURE GROUND. 6" x 6".

an experiment made by the potters either from choice or necessity to show the dark hair, as a black glaze was perhaps not handy ; but this gentleman said he had just come from the Blue Nile, and that all the people there stained their beards green. I think it has been conjectured that some of the engraved signets found in Assyria and Persia were engraved with the points of the flint arrow-heads.

I do not know why it should be more unbecoming to have a blank place outside a building made glorious with colour than in the inside ; some of the churches and cathedrals where the

windows occupy nearly the whole wall space are filled with the most gloriously coloured glass that can be conceived. I do not see why a fine panel of enamelled terra-cotta or glass mosaic should not delight us like a glorious stained-glass window, except that the liquid colours seen through the glass are more heavenly. I cannot account for the impression any more than I can for that crimson leaf that I saw on the outskirts of a sombre wood near Rome in 1854, which flamed like a ruby, and fixed itself on my memory.

Some of the monks who had a divine genius for colour devoted themselves, as an act of worship, during the twelfth century, to perfecting the harmonies of colour in the glass of the churches, and these harmonies have never been surpassed, nor, I think, equalled. To take some of those that we have at home, I may mention the windows in the aisles of the choir at Canterbury. When you see the grand windows at Chartres lit up by the sun while an anthem is being sung, and some curling clouds of incense are arrested by the vault, you think that nothing more heavenly is possible, and that the highest ambition of man must be to become a glazier.

There are many very fine specimens of coloured glass in the mosques at Cairo, and although the glass is very thin, being set in a projecting frame of Arabic mortar, the uniform colour is greatly varied by the shadow from the framework, perhaps only one small piece getting perfectly lit by the sun, and that tiny piece then glows like a jewel.

Perhaps second only to the windows of Chartres—if second to anything—are the lovely windows in the cathedral at Florence, said to have been made by an Italian gentleman who had studied glass painting in Flanders. The windows are said to have been designed by Ghiberti.

Both in glass and in rude native pottery many of the artistic effects we most admire are what may be called accidental, and we sometimes are apt to deplore the more perfect methods that have been introduced in modern times; but that, in my opinion, is a most ridiculous desire, and only shows our stupidity and incompetence, for with a little thought and trouble we could introduce a pattern which would have the same effect in breaking the uniformity of tone.

It has been stated by those who have lived in Persia that the potters there would make the main colour with which a piece is enamelled perfectly uniform, like a commonplace English potter; but I can hardly believe that this is true, for we see in their woven stuffs,



FIG. 2.—DAMASCUS TILE: BLACK, DARK AND LIGHT BLUE, PURPLE, WHITE, AND GREEN, ON WHITE GROUND. 9" x 9".

where nothing depends on the action of fire, that it is quite common, if not universal, for the Persian weavers to vary the tones of any colour that forms the main centre of a bordered carpet. There was a beautiful green Persian carpet that I once saw laid down; the weaver had put in certain parts several stripes of almost pure yellow; and in the case of yellow carpets I have seen the same narrow stripes, in black. Personally, I do not particularly

admire this black accent in the yellow carpet, although we must all feel with the weaver that nothing is so abhorrent to an eye cultivated to appreciate colour as absolute monotony; in this carpet that I spoke of, with the whole centre one mass of green, the introduction of a little yellow made it like one of those moss-grown banks in a wood where an excess of moisture makes one part streaked or dappled with yellow. I was amused by hearing a fashionable lady criticise this green carpet: she was asking the lady of the house when she was going to have her new carpets, and the latter replied, "We have just got them." The visitor remarked that it

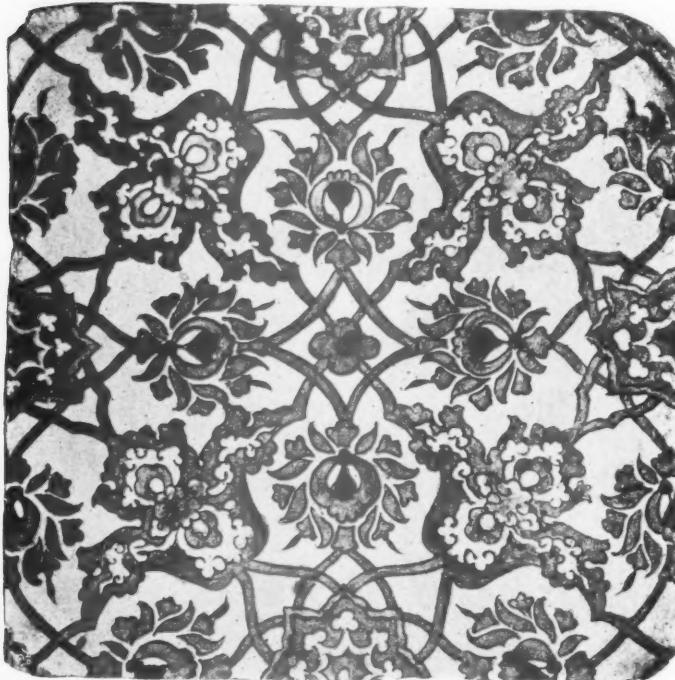


FIG. 3.—ARABIC TILE: BLACK, PURPLE, AND TWO SHADES OF BLUE ON A WHITE GROUND. 10½" x 10½".

was curious that the new carpet had faded; she evidently had no appreciation of colour.

Those of you who are colourists will have observed how Nature abhors uniformity, and that if a whitewashed wall is left sufficiently long Nature will form this monotonous patch of white into a most beautiful variegated one with suggestions of almost all the colours. Of course to get perfect loveliness and harmony with the enamelled colours of pottery we must have the same gifts of perfect unselfishness and devotion that distinguished the mediaeval glaziers; in the twelfth century they were mostly monks with a passion for colour, and they devoted themselves to making harmonies that have never been surpassed, even if ever equalled. The loveliness of stained glass is not wholly within man's power. The sun produces the different entrancing effects, which in the finest specimens suggest melting jewels being mixed together that produce such exquisite beauty as we perhaps have never seen in nature, but have only dreamed of at ecstatic moments.

The sun came dazzling through the leaves,
And flamed upon the brazen greaves
Of bold Sir Lancelot.

I am really only advocating the perfecting of colour in opaque substances, which never, as far as I am concerned, has kindled the raptures that are produced by a transparent medium lit by the sun. The Saracens, when they had attained skill, produced the most enchanting effects with dead colour and gold by graduating the surfaces, so that the light struck on them at different angles. That piece of the Alhambra that Owen Jones had done at the Crystal Palace shows us what marvellous effects the Saracens achieved by using a few colours and some gold on surfaces of slightly different altitudes and apparently slightly different angles. The least shift in the beholder's position will bring out an entirely new pattern of different colours from the one before it, and in some cases both can be made to melt into each other.

You all probably know that the Greeks painted their statues, as did the mediaevals of the thirteenth century. I do not suppose that the Greeks painted the white dresses over with distemper, but, if necessary, merely put a painted or gilt border on the robes; and I am of opinion that all the flesh that was shown was merely glazed over with some kind of varnish, so that the white marble showing through looked like flesh. In those tombs that were discovered by Hamdhi Bey at Sidon and are now in the Museum at Constantinople, the statues on the main body of the tomb, which are about half life size, are all left in the pure white marble; but some leaf ornament on the sloping sides of the roof of the sarcophagus has the ground stained a darkish purple, and in the pediments at each end, where the figures are small, they are all coloured, the mantles being generally of scarlet or purple, the bronze armour gilt, and the hair coloured, like some of the coloured Tanagra figures. I cannot now recollect whether the lips were coloured red, but we know from Plato that the eyes were coloured after nature. In Book IV. of the *Republic*, Plato says:—"If we were painting a statue, and someone were to come and blame us for not putting the most beautiful colours on the most beautiful parts of the body—for the eyes, he would say, ought to be purple, but they are black—in that case we might fairly answer, 'Sir, do not imagine that we ought to beautify the eyes to such a degree that they are no longer eyes, but see whether, by giving this and the other features their due, we make the whole beautiful'" (Jowett's translation, 1875).



FIG. 4.—PANEL IN "VITREOUS FRESCO," MODELLED IN LOW RELIEF.
(DOULTON & CO.)

In one of Giovanni Pisano's white marble statues of the Virgin the hair was gilt, the face was painted, and there was a little piece of lining of one of the robes painted, and I think a pattern on the border of the robe was gilt. The supposition that the Greeks, who were the greatest artists the world has yet seen, would have daubed with distemper the splendid Parian or Pentelic marble is absurd.

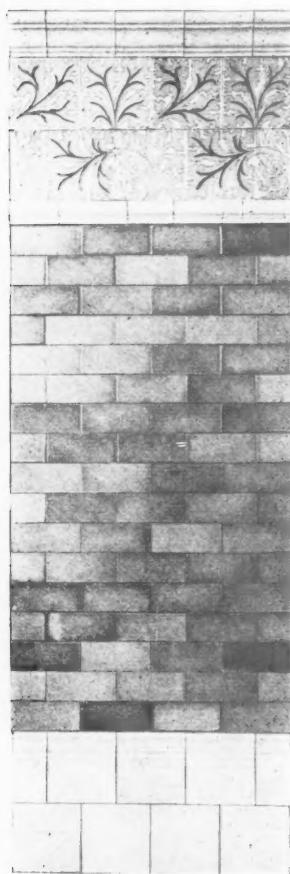


FIG. 5.—WALL TILING IN CARRARA STONE-WARE. (DOULTON & CO.)

Perhaps it is no use in the present day recommending anything that would merely confer beauty on a town, but I think it might be urged on the ground of health and cheapness that if the outsides of buildings were covered with enamelled terracotta it would be much better for the inhabitants' health than the present grime, and that the expense of a constant repainting of fronts would be saved. The state of the houses is bad enough in London, but when you come to the manufacturing towns of the North, such as Leeds or Manchester, the making of the fronts clean, bright, and beautiful, instead of black, would certainly have a beneficial effect on the health of the inhabitants. Of course health is an important consideration, but we hope that the country has not sunk so low as to be absolutely indifferent to the beauty or ugliness of anything.

Why do we commit to memory passages of poetry that delight us? It is, I think, for two reasons—one, to have "infinite riches in a little space," and the other to have something delightful that we can always enjoy. As we read that "one star differeth from another star in glory," so we may have in our coloured buildings and houses some more august, some more beautiful, some more impressive, and some gayer than others.

You cannot expect to take any high position in the world if you are not willing to endure privation to attain it. The first attempts might not be properly remunerated, and even the most successful ones might not be appreciated at anything like their worth, but you must be prepared to make great sacrifices to be allowed to confer benefits on mankind.

I think I told you that when I first went to Venice some of the fronts of the houses on the

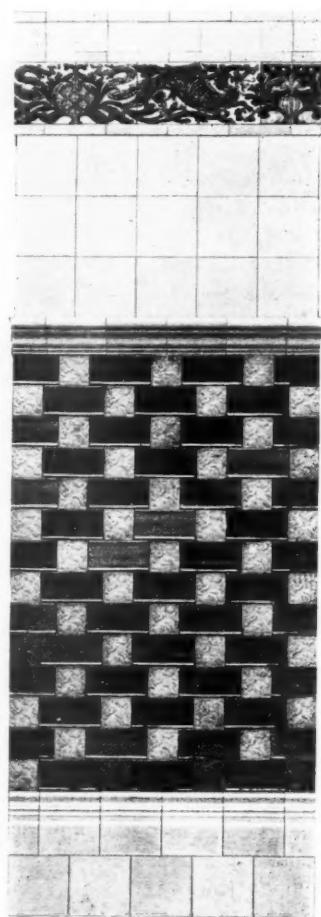


FIG. 6.—WALL TILING IN SALT-GLAZED AND CARRARA STONEWARE. (DOULTON & CO.)

Grand Canal and in some of the Piazzas showed the remains of figure painting on the plaster, and the same sort of figure painting then existed on the houses at Brescia. Last year I showed you some photographs of Roman palaces that had been painted with subjects by Baldassare Peruzzi, and where these are made as you would make a sculptured frieze or panel I think nothing can be more appropriate; but I do not think it is so where the fronts look as if they had been large pictures with holes cut through them for windows; still, you must recollect that painters then abounded, and that it was very difficult to get a living by painting, so that however much the artist might have objected to this method of decoration he was forced to do it to get his bread. Many of Raffael's frescoes in the Vatican do not strike me as appropriate decoration. Walls have a certain structural purpose to fulfil, and if the subjects are properly framed as pictures they may look appropriate as well as beautiful. This may have been suggested to the painters by the common practice of hanging the walls with tapestry which contained landscapes, battles, and the like, though, as tapestry is a different material from the walls, it looks more reasonable; I think if our artists were employed on such work now, they would be careful not to destroy the appearance of solidity in the wall. The Byzantines, when they put figures on to their domes and vaults, mostly made them sufficiently conventional to show that they were intended as mere decorations of the walls, vaults, or domes.

I mentioned in my former lecture on this subject the cases that I had noticed in London, and I have noticed comparatively lately a very apt use of coloured decoration in enamelled earthenware, sometimes intermixed with pictures in glass mosaic.

There is a celebrated frieze of Luca della Robbia ware, a copy of which is in South Kensington Museum, but it is not very successful as a decoration.

It is most probable that the Panathenaic frieze of the Parthenon was partially coloured, and no doubt the Greeks had been careful not to make the colour too realistic.

I think you will all agree with me that in this climate, where we have so much dark and damp weather, it is not pleasant to walk through streets of dingy brick in misty weather or in drizzling rain, when every wall has black tears running down it; while if the houses were faced with a material which could be washed with a hose, we should avail ourselves of this method of keeping the outside of our houses clean; and if in addition they were beautifully coloured, it would raise our spirits.

A certain number of the Saracen houses are adorned outside with enamelled tiles, but as a rule ornamental decorations were reserved for the inside, the people always being afraid of attracting the Evil Eye by any show of wealth, beauty, or magnificence. You probably remember that Al-ed-Deen was kept in a vault till he was fourteen to avert the Evil Eye. In the Gate of Justice at Granada coloured tiles have been put in certain places.

I have never been in Persia, where more external display of colour is used than in other Saracen countries, and where, too, the exclusion of figure subjects was not so much insisted on, for the Persians are Shias, or heretical Muslems.

In the late Lord Leighton's Arab Hall there are many tiles painted with birds, beasts, fishes, and men, probably of Cufic work, which, I suppose, once belonged to some heretical Mussulman, and afterwards came into the possession of a devout one, who, having consulted the doctors of the law, was told that he was only breaking the commandment by having representations of living things, and if he cut all their throats he would fulfil his religious obligations; and, if closely examined, these animals and human beings can be seen to have a cut across the throat; this does not apply to replicas executed by Mr. De Morgan.

The only large external thing which I have seen coloured in Italy is the spire of a church at Lugo. This was built of bricks with a rounded end, the rounded end forming the external part of the spire; these bricks were all enamelled, and as far as I recollect

formed into ribbons and bands. We must, however, remember that nearly all Chinese and Japanese architecture is decorated with colour, and some of it is described by travellers as magnificent; we know that almost every imported plate, cup, saucer, or vase is painted with some of the incidents of life; and this scheme of decoration, as far as the minor articles of use are concerned, was taken up by almost all European nations when porcelain was discovered about 1700 by Böttcher, as painting had been earlier employed by the Italians in their majolica plates and dishes of earthenware. I think the early designs were the best, as we see in some of the lustre-ware by Maestro Giorgio. The early painters of these majolica plates



FIG. 7.—MOAIC PANEL IN CEILING OF GREAT VESTIBULE, MAGASINS DU PRINTEMPS, PARIS. M. PAUL SÉDILLE, ARCHITECT.

and dishes were very well instructed in the art of ornamentation, and those plates painted by Maestro Giorgio and his contemporaries show a most excellent judgment in the manner in which the rim, the bevel, and the bottom were ornamented. But when the potters enlisted the figure painters at a low rate, these artists were very often ignorant of the laws of ornamentation, and painted figure subjects or country scenes over the whole plate, as if it were a flat surface, which causes curious distortion in the figures, and is always inappropriate.

I did mention the possibility of using the various coloured porphyries, which I think may be found in Norway or Sweden, of every variety of colour, from white to black; but as the labour required to work porphyry is very great indeed, even if the stone were got for nothing, we could hardly expect such a material to be used; but it is the only stone except

granite that will stand the abominable air of London. Marble is a lovely material, but it cannot be used outside a building with any success in London on account of its so rapidly perishing by the vicissitudes of the climate and the foulness of the air. I do not know that it is much more perishable in London than it is in Venice; but there at least disintegrated marble is not covered with dust and soot. Charles Garnier defends the use of marble outside buildings in Paris, and says "truly the marble decays, but it gives a certain air of distinction to the building, even as a gentleman in rags could not be confounded with a peasant or common fellow even in his best clothes." But I do not think this simile quite holds good in



FIG. 8.—MOAIC IN ARMENIAN MORTUARY CHAPEL, JERUSALEM.

"The mosaic is a most elaborate piece of work, the stone tesserae being of almost every colour. Within a border of the guilloche pattern we observe a vine, from which springs a vine ramifying into branches, on which hang grape-clusters; among the branches are numerous birds, peacocks, ducks, storks, pigeons, fowls, an eagle, a partridge, a parrot in a cage, etc."—Dr. Bliss's report; see "Some Early Christian Churches in Palestine," by Archibald C. Dieckie, JOURNAL R.I.B.A., 11th March 1899.

London, for the soot and grime soon take away all traces of beauty from the marble, so I think we must reserve marble for inside work.

In urging you to study the harmonies of colour I am actuated by two motives: one is the perpetuation of the beauties of nature in the outside of our buildings, and the other the desire that my fellow-countrymen should not sink to that degraded position in which they have lost all sense of delight in its surpassing loveliness. It seems to me that Nature has surrounded us with all these varied beauties of colour for our solace, refreshment, and purification,

and that it is most important that the architects, painters, and sculptors should do their utmost to prevent the nation from sinking to that depth of insensibility that no beauty can touch it. I have always thought that it was very shameful that the great wise men, the lawgivers, the philosophers, the great poets, the great painters, sculptors, and architects, have been in general so badly rewarded; but seeing that this base ingratitude appears ingrained in every nation, those of you who are great must sacrifice yourselves to prevent your fellow-men from sinking to a lower level than they have arrived at at present, remembering that if Buddha and Diogenes were beggars, it was in the hopes that they might raise their fellow-creatures to a higher level.

One of the things about decoration in colour that is the most distressing to the designer is that if the colour is merely paint, and is not a regular figure subject or landscape on canvas or a panel, when the decorated part gets dirty or stained, more especially if the then occupier is not the person for whom the original decoration was done, the newcomer may find some coats of white paint the cheapest substitute for the former decorative painting, and in using it he utterly destroys the decoration.

A client for whom I was decorating a house begged me to see his old house, where one of his rooms had been decorated by the late Godfrey Sykes. I called at the house with his note of introduction, but the occupier was abroad, and as I had not much time to spare I begged the servant to let me see the room, which he was very loth to do; but at last he yielded to my importunity, but said grumbly, as he showed me in, he could not see what anybody wanted to look at it for, and I found that the room had been painted white.

The use of mosaic prevents this utter destruction of what may be a beautiful thing, and I have found in sumptuous drawing-rooms glass mosaic with a gold ground by no means too brilliant for its surroundings. There was one drawing-room I did, to which unfortunately I cannot give you the entry, as it was sold; but I can show you some of the designs for the mosaic by Mr. Walter Crane, and you can see other decorations by the same designer in the late Lord Leighton's Arab Hall. There it is contrasted with beautiful marbles, Arabic tiles, and stained glass.

In some few cases this glass mosaic is too brilliant and too sparkling to harmonise with the rest of the work. The late George Edmund Street, at the Guards' Chapel, Birdcage Walk, used figure panels in marble mosaic, which harmonised very well with the rest of the chapel, as it is softer in its contrasts, and has none of the sparkle of glass mosaic.

The most abominable misuse of mosaic, except for brooches or little articles of personal adornment, is the attempt to imitate pictures with minute tesserae, commonly called Roman mosaic; two of Raffael's pictures, supposed to be masterpieces, are done in this way at St. Peter's. Doubtless they show the composition of Raffael; but, although Raffael was no colourist, he would never have painted a picture that set your teeth on edge as these do.

I mentioned before some very effective glass mosaic put on a pink-fronted terra-cotta shop at South Kensington, a little before you come to Mr. Street's church.

I think for floors the most magnificent sort of mosaic is the Opus Alexandrinum, which may be seen in several of the churches at Rome and at Constantinople. If I recollect rightly, there are the remains of subjects done in this Roman mosaic on the floors of Caracalla's Baths. In one of the great Exedras in the gymnasium of these baths the floor is in mosaic divided into compartments, each showing members of the fancy who, I suppose, had distinguished themselves in the games there, and there was a strong resemblance in their faces to distinguished members of the prize ring over here.

I beg to thank Messrs. Doulton and Messrs. Simpson for their loans of coloured and enamelled terra-cotta.



9, CONDUIT STREET, LONDON, W., 26th Sept. 1903.

CHRONICLE.

Sessional Papers 1903-04.

Arrangements have been made for the following Papers to be read at the Ordinary Meetings next Session :—

- Nov. 16.—“Le Trésor de Cnide et les Monuments de l’Art Ionien à Delphes,” by Monsieur J. T. Homolle [*Hon. Corr.M.*].
- Dec. 14.—“The Royal Victoria Hospital, Belfast : Its Inception, Design, and Construction,” by Messrs. Wm. Henman [F.] and Henry Lea, C.E.
- Jan. 18, 1904.—“Architecture in Lead,” by Mr. J. Stark e Gardner.
- Feb. 15.—“The Bacteriological Disposal of Sewage from Isolated Buildings,” by Professor Frank Clowes, D.Sc.
- Mar. 14.—“Plaster Decoration,” by Mr. J. D. Crace [H.A.]
- Mar. 28.—“Electric Generating Stations,” by Mr. C. Stanley Peach [F.]
- Apr. 18.—“The Statues of Wells Front, with some Contemporary Foreign Examples of Sculpture,” by Mr. E. S. Prior.
- May 16.—“The Planning of Collegiate Buildings,” by the Rev. J. B. Lock, M.A., Bursar of Gonville and Caius Coll. Camb.

The President.

Mr. Aston Webb, R.A., has been elected *Membre Correspondant* of the Société Centrale des Architectes Français.

Memorial to Mr. Penrose in St. Paul's.

The tablet to the memory of Mr. F. C. Penrose is now in course of preparation, and it will, it is hoped, be shortly fixed in the crypt of St. Paul's Cathedral. The subscription list is still open, and members who desire to contribute towards the expenses of the tablet are requested to send their donations to the Secretary of the Institute by an early date.

School of Art Wood-carving.

The School of Art Wood-carving, South Kensington, which now occupies rooms on the top floor of the new building of the Royal School of Art Needlework in Exhibition Road, has been reopened after the usual summer vacation. The Committee of the school wish it to be known that some of the free studentships maintained by means of funds granted to the school by the Technical Education Board of the London County Council are vacant. The day classes of the school are held from 10 to 1 and 2 to 5 on five days of the week, and from 10 to 1 on Saturdays. The evening class meets on three evenings a week and on Saturday afternoons. Forms of application for the free studentships and any further particulars relating to the school may be obtained from the manager.

Façade Competitions.

Professor Aitchison, R.A., who has just returned from Paris, suggests that the following article by Emile Berr, which appeared under the heading “Concours de Façades” in *Le Figaro* of the 20th inst., will interest members and might be printed in the JOURNAL. M. Bouvard, who has brought about these competitions in Paris, holds the office of Directeur des Services d’Architecture de la Ville de Paris, and is a Corresponding Member of the Institute :—

C'est à M. Bouvard que vint, il y a deux ou trois ans, l'idée de ce concours. Et l'idée est charmante. En bon Parisien et en spirituel artiste qu'il est, M. Bouvard se désolait de constater combien certaines capitales étrangères se montrent supérieures à Paris dans l'art d'orner leurs rues,—j'entends d'y bâtrir des maisons où apparaisse un souci de beauté. Et il est vrai que nulle part, depuis cent ans, l'on n'a montré moins que chez nous ce souci-là. Il semblait que seuls les monuments publics ou l'hôtel particulier eussent quelque droit à l'élegance, et qu'il y eût une sorte de ridicule à prétendre parer d'un peu de grâce la façade d'une de ces bâtisses méprisables qu'on appelle des immeubles “de rapport.” Haussmann lui-même eut le dédain profond de cet art-là ; et pas un instant l'idée ne vint à ce grand homme qu'une ville comme Paris pût souhaiter, pour être belle, autre chose que des rues larges, bordées de casernes alignées proprement. Les boulevards de Sébastopol et de Strasbourg donnent une exacte idée du genre de beauté édiltaire qui suffisait, vers 1860, à contenir les hommes chargés “d'embellir” Paris. L'effort de leur esthétique s'arrêtait là.

Leurs successeurs ont pensé qu'on pouvait aller plus loin, et, depuis une vingtaine d'années, des architectes se sont avisés—ayant à construire n'importe où des maisons destinées à n'importe qui—de vouloir que, tout de même, ces maisons ne fussent point quelconques tout à fait, et qu'un peu d'élegance les décorât . . . Et M. Bouvard a fait mieux encore ; il a encouragé cet effort ; il a obtenu de nos édiles que, chaque année, les architectes des plus jolies façades neuves de Paris fussent récompensés, et que la faveur de certains dégrèvements fût accordée aux propriétaires de ces maisons.

Le concours de 1903 sera jugé dans quelques semaines, et dès ces jours-ci, le jury, que préside M. Bouvard, commencera ses promenades à travers Paris. Il aura de la besogne, le jury de cette année ; la liste des façades “con-

currentes," que j'ai sous les yeux, ne comprend pas moins de cent cinq adresses. Cela fait cent cinq maisons neuves auxquelles le jury devra rendre successivement visite, et qui s'éparpillent un peu partout.

Certains arrondissements sont cependant plus favorisés que d'autres, et c'est surtout à l'ouest de Paris, à Batignolles et à Passy que "le bâtiment va"; sur cent cinq maisons neuves dont les architectes sollicitent l'approbation du jury municipal, il y en a trente-quatre (le tiers du lot) groupées dans ces deux arrondissements.

Mais ce qui est très intéressant, c'est de voir se répandre ce souci de construire "joliment" en des parties de la ville où, même en ces dernières années, les architectes ne se préoccupaient guère d'intéresser les yeux de l'habitant. On ne dédaigne plus d'élever de jolies maisons dans Montmartre; onze façades neuves y attendent le jury. Dans le cinquième arrondissement, aux alentours de cette rue Galande, qui fut un des repaires célèbres de Paris, je compte six concurrents; mieux encore: dans les populaires arrondissements du Sud, de Bercy à Plaisance et Vaugirard, M. Bouvard et ses collègues rencontreront sur trente façades nouvelles un effort d'art. Et c'est ainsi que se démocratise, petit à petit, toutes les formes de la beauté.

Le seul inconvénient de cette émulation nouvelle est d'exciter à des audaces fâcheuses tels artistes, chez qui l'excentricité tient lieu de talent, et qui ont doté certaines rues de Paris d'œuvres prodigieuses. En vérité, s'il est juste que la beauté soit récompensée, il serait juste aussi que certains attentats publics à la beauté fussent punis. Je signale ce genre d'abus à M. Bouvard. Qu'il aille, un jour, se promener du côté de la rue d'Abbeville.... Il pensera qu'il y a de certaines fantaisies architecturales qu'un préfet de police ne devrait point tolérer;—qu'il devrait exister une limite légale au droit de manquer de goût.

Connissez-vous aussi le dernier immeuble "modern style" de l'avenue Rapp? Celui-là est célèbre dans le quartier; et, ce qui est plus grave, c'est que le jury des façades l'a, paraît-il, récompensé l'année dernière.

C'est un fâcheux précédent et une faute qu'il ne faudrait point recommander trop souvent; ou nous en arriverions vite à regretter Haussmann et le boulevard de Sébastopol.... Ce qui serait déplorable.

The Explorations at Knossos

Dr. Evans's communication to the British Association on his latest discoveries at Knossos forms an interesting supplement to the Papers read at the Institute last December by the distinguished explorer and his assistant Mr. Theodore Fyfe.* Dr. Evans says:

It had seemed to the excavator possible that this year's campaign in the prehistoric palace at Knossos might have definitely completed the work. But the excavations took a wholly unlooked-for development, productive of results of first-rate importance both on the architectural and general archaeological side, and calling still for supplementary researches of considerable and indeed, at present, incalculable extent.

The search for the tombs, which was principally carried out in the region north of the palace, only resulted in the discovery of a necropolis of secondary interest in a much destroyed condition. At the same time remains of houses were brought to light, going back to the earliest Minoan

* "A Bird's Eye View of the Minoan Palace of Knossos, Crete," by Dr. Arthur Evans; "The Painted Plaster Decoration at Knossos, with special reference to the Architectural Schemes," by Theodore Fyfe—JOURNAL for 20th December 1902.

period, and proving the continuous extension of the prehistoric city for a distance of over a quarter of a mile north-east of the palace.

At its north-western angle the palace area itself has gained a monumental accession. The building proved to extend beyond the paved court which lies on this side, and excavation here brought to light what can only be regarded as the royal theatre. This consists of two tiers of limestone steps, eighteen in number and 30 feet in width, on the east side, varying from six to three, with an extension of 50 feet on the south, while between the two is a raised square platform. The steps or low seats and platform overlook a square area where the shows must have taken place. Owing to the made character of the ground to the north-east the limestone slabs on that side had either disappeared or were brought out in a much disintegrated condition, and it was found necessary for the conservation of the rest of the monument to undertake considerable restoration. This was, however, facilitated by the fact that the lower courses of the outer supporting wall were throughout preserved. The theatre would have accommodated about five hundred spectators. A somewhat analogous feature was discovered by the Italian mission, bordering the west court of the palace at Phestos, but the arrangement at Knossos is much more complete, and gives us the first real idea of the theatre in prehistoric Greece. The pugilistic shows represented on certain small reliefs at Knossos and Hagia Triada and the traditions of the "dancing-ground" of Ariadne, executed by Daedalus for Minos, may throw a light on the character of the performances in this theatrical area.

Between this building and the west court of the palace an area was explored containing a very complex mass of constructions representing at different levels every age of Minoan culture, and apparently belonging to a sanctuary connected with the Cretan cult of the Double Axe and its associated divinities. Painted pottery and other objects were here found, with designs referring to this cult. Among other discoveries were highly decorative polychrome vases belonging to the Middle Minoan period, more or less contemporary with the twelfth dynasty of Egypt. Of later palace date was an extremely important deposit consisting of a bronze ewer and basins, with exquisitely chased ornamentation in the shape of lilies and various kinds of foliage.

On the north-east of the palace, built into the side of the hill, was uncovered a remarkably well-built house, constructed largely of fine gypsum blocks, which appears to have been a kind of royal villa. Here, as in the domestic quarter of the palace, the upper storey is also well preserved, and there are two stone staircases, one with a double head. On a landing here was found a magnificent painted jar containing reliefs of papyrus plants in a new technique. The principal chamber was a columnar hall with a tribuna at one end, backed by a square apse containing the remains of a gypsum throne, the whole presenting an extraordinary anticipation of the later basileia.

Within the previously uncovered palace area supplementary explorations of lower levels have been carried out on an extensive scale. A whole series of deep-walled chambers, perhaps representing the dungeons of an earlier palace, have been opened out. Excavations below the floor-level of the Olive Press area have brought to light the floor-levels of more ancient chambers containing exquisite painted pottery belonging to the Middle Minoan period and sealings throwing an interesting new light on its glyptic art and the early "pictographic" type of script. Beneath the pavement of the Long Gallery of the magazines a continuous line of deep stone cists (kaselles) was discovered, and from the remains of chests inlaid with glazed ware and crystal mosaic, accompanied by quantities of gold foil, it is clear that these repositories had once contained

treasure. Near the east pillar room a small pit was found beneath the floor-level containing vases and other objects belonging to the earliest Minōan period that immediately succeeds to neolithic, and affording the first collective view of a representative type series of that period. The character of the glazed beads found in this deposit seems to indicate relations with early dynastic Egypt. The exploration of the neolithic stratum which, to a depth of 25 feet, underlies those of the "Minōan" buildings was continued, several new shafts being dug within the palace area. The successive phases of the local neolithic culture are thus becoming more clearly defined.

The investigation of the cause of a slight depression in the pavement of a store-room immediately north-east of the east pillar room led to a discovery of extraordinary interest. Beneath the pavement and a small superficial cist belonging to the latest palace period were found two spacious repositories of massive stonework containing, in addition to a store of early vases, a quantity of relics from a shrine. These had evidently been ransacked in search for precious metals at the time of the reconstruction above, but a whole series of objects in a kind of faience like the so-called Egyptian "porcelain," but of native fabric, had been left in the repository. The principal of these is a figure of a snake goddess, about fourteen inches high, wearing a high tiara up which a serpent coils, and holding out two others. Her girdle is formed by the twining snakes, and every feature of her flounced embroidered dress and bodice is reproduced in colour and relief. A finely modelled figure of a votary, of the same glazed material, holds out a snake, and parts of another are also preserved. The decorative fittings of the shrine include vases with floral designs, flowers and foliage in the round naturalistic imitations of nautilus and cockles, rockwork, and other objects, all made of the same faience. The central aniconic object of the cult, supplied in the formerly discovered shrine of the Double Axe, was here a marble cross of the orthodox Greek shape. The cross also occurs as the type of a series of seal-impressions, doubtless originally belonging to documents connected with the sanctuary found with the other reliques. A number of other seal-impressions deposited with these show figures of divinities and a variety of designs, some of them of great artistic value. An inscribed tablet and clay sealings with graphite characters were also found, exhibiting a form of linear script of a different class from that of the archives found in the chambers belonging to the latest period of the palace.

In view of these important results it is obvious that further investigations beneath the later floor levels must be carried on throughout the palace area. The search for the royal tombs has also to be continued. The region about the theatre and the north-west sanctuary still requires methodical excavation on a considerable scale, and the neolithic strata call for continued investigation. The need for further assistance from those interested in the results already obtained is still urgent.

Obituary.

WILLIAM HENRY CORFIELD, M.D., F.R.C.P., Professor of Hygiene and Public Health at University College, London, and Consulting Adviser to H.M. Office of Works, who died on the 26th ult. in his sixtieth year, had been connected with the Institute as Hon. Associate since 1883.

He was born in 1843 at Shrewsbury and was educated at the Cheltenham Grammar School and Magdalen College, Oxford, where in 1863 he gained a first-class in mathematical moderations.

In the same year he was selected by Professor Daubeny to accompany him in his examination of the volcanic appearances in the Montbrison district of Auvergne. In 1867 he won the Radcliffe Travelling Fellowship, which gave him a chance of visiting the professional centres of the Continent and, amongst other places, Paris, where he studied analysis with special reference to hygienic matters under Berthelot at the Collège de France, and attended Bouchardat's lectures on hygiene. In London he studied at University College Hospital. In 1868 he took his M.B. degree and was appointed examiner for honours in natural science at the University of Oxford. In 1869 he received the further appointment of Professor of Hygiene and Public Health at University College, London. He started in 1875 at this college the first hygienic laboratory established in London.

In 1869 he was elected a member of the committee appointed by the British Association to report on the treatment and utilisation of sewage, and prepared for the Committee a Digest of Facts, which was published in 1870 and has gone through two subsequent editions.

In 1872 Dr. Corfield was elected medical officer of health of St. George's, Hanover Square, a post he held for over twenty-eight years. In the same year he was appointed lecturer on the laws of health at the Birmingham and Midland Institute, and afterwards at the Saltley Training College. In 1873 he delivered a course of lectures on Water-supply, Sewerage, and Sewage Utilisation to the Royal Engineers stationed at Chatham. In 1879 he delivered the Cantor Lectures before the Society of Arts, taking for his subject "Dwelling Houses, their Sanitary Construction and Arrangements." These lectures were translated into French by Dr. Jardet and published in Paris.

Dr. Corfield devoted himself for over 30 years exclusively to sanitary practice, advising as to the causes of outbreaks of disease connected with sanitary defects and the remedying of such defects. At the International Health Exhibition in 1884 he was director of the hygienic laboratory, and contributed a valuable lecture on Foul Air in Houses. He was also a member of the committee that superintended the construction of the "healthy and unhealthy houses" which attracted so much attention at that exhibition. In 1885 he delivered the anniversary address to the Sanitary Institute on the Water-supply of Ancient Roman Cities, with especial reference to Lugdunum (Lyons), in which he showed how the Romans employed inverted syphons made of lead for the purpose of carrying their aqueducts across deep valleys. In 1893 he delivered his Harveian Lectures before the Harveian Society of London on Disease and Defective House Sanitation. These lectures have been translated into French and published in the *Bulletin* of the Royal Society of Public Health of Belgium (1899), and also into

Hungarian under the auspices of the Royal Society of Public Health of Hungary.

His work was recognised abroad, and he was Honorary Member of most of the Continental hygienic societies. It was through his efforts that the International Congress of Hygiene, to which he acted as foreign secretary, was held in London in 1891 under the presidency of the King (then Prince of Wales.)

The foregoing notes are from a very complete biographical notice which appeared in the *Lancet* of the 12th instant.

HERBERT FORD, who died on the 1st inst. at the age of seventy, was elected a *Fellow* of the Institute in 1870. He practised in the City for upwards of forty years, and was looked upon as an expert in the designing of warehouses adapted to the Manchester and allied trades. In later years Mr. Ford was associated as partner with Mr. W. J. Burrows, and among the buildings carried out by the firm were Messrs. Pawson & Leaf's, and Messrs. J. Howell & Co., St. Paul's Churchyard; Messrs. J. Rotherham & Co.'s premises in Shoreditch; Messrs. Stapley & Smith's factory at Hackney, and alterations to their London Wall premises; large blocks of offices in Cheapside, Milk Street, Aldermanbury, Holborn, and Southampton Row; alterations to the Phoenix Assurance Company's premises in Lombard Street; the restoration of warehouses demolished by the great Cripplegate fire; and several blocks of schools.

Intimation has been received of the death of ARTHUR JOB BARLOW, *Associate*, elected 1880.

LEGAL REGISTRATION OF ARCHITECTS.

9th September 1903.

To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—It was not my intention, in writing to you,* to enter in detail into the arguments for and against registration. Considering the quantity of ink and paper which this discussion has already consumed, a skilled controversialist (which I am not) might hesitate before demanding from you the necessary space.

My sole object was to state my own convictions—convictions which I believe to be shared by many provincial architects, and which have at least been formed after a careful study of what has been written on the question during these last fifteen years or more.

One may admit the specious nature of many of the arguments used, whilst demurring altogether to the conclusions which it is sought to draw from them, and whilst protesting especially against

* *Journal*, 25th July, p. 488.

the way in which the support of young architects has been enlisted on behalf of registration, by the holding out of prospects whose fulfilment it would be far more likely to postpone than to advance. It is easy to paint a picture of the architect's lot as it is, and as we should like it to be, and then to assume—with the aid of a logic familiar in commercial literature—that registration is the talisman which is going to create harmony where chaos now reigns; but there will surely be not a few who, noting the fact that registration is to begin by accepting and perpetuating a state of things which itself calls urgently for reform and alteration, will hesitate before they acquiesce in any such experiment.

What is the existing state of the architectural profession, upon which we are to ask the Legislature to set the seal of registration? A tree is judged by its fruits, and how far will these bear examination?

For many years past, more than a generation, its strictly architectural aspect seems to have been growing "small by degrees and beautifully less," until one sometimes wonders whether the name of "architect" may not soon come to be regarded as borne on the principle of *lucus a non lucendo*. After half a century of sustained educational effort we may say with truth that there has never been a time when architecture was more conscientiously studied and more indifferently practised than it is at present, a fact of which both London and the provinces afford abundant evidence.

It has been frequently pointed out that an increasingly small percentage of the building work of the country is now carried out under the direction of practising architects, although the number of these latter is by no means diminishing. One asks, therefore, how is this important profession employing its energies, whilst the civil engineer, the surveyor, the decorator's man, and the specialist of every brand are relieving it of its functions one by one. No legislation can mend a state of things such as this. Instead of asking the public "to take us over as we stand," we have far more reason to put on sackcloth and ashes, and to seriously ask ourselves by what manner of men, and under what conditions, architecture has been produced in past ages, remembering that its future is in no way bound up with the profession in the particular form in which it now exists.

Architects exist for the good of architecture, not conversely, and if they fail to accomplish this, their work will pass—as it is doing—into other hands in spite of fifty Registration Acts.

The arguments based on Continental conditions will not bear pushing very far. If registration should be the result, it cannot be the cause of the recognition of architecture which one finds on the Continent.

In the countries concerned, architecture receives the same official patronage which is extended to

all the Fine Arts, and in our own to none of them. Whether such official patronage be or be not a desirable thing, is a question in regard to which there may be some difference of opinion amongst those who have studied modern Continental architecture, but if registration could accomplish a change of attitude on the part of John Bull, so often sighed for by his admirers, how comes it that painters and sculptors, musicians and the rest do not demand it? One reads of suggestions and aspirations in abundance towards this public fostering of the sister arts, but I do not recollect that registration has been amongst them. Neither can any trustworthy comparison be maintained between the profession of architecture, as it now exists, and those of law and medicine—although in connection with one branch of the latter, viz. dental surgery, I have heard it stated, by men well qualified to speak, that its registration has largely helped to make unqualified dentistry “a paying business.”

However, I am quite content to base my objections on the individual facts relating to our own case, and instead of taking registration for a motto I would suggest the words of Hamlet's advice to the players, “Oh, reform it altogether!”

Yours obediently,
CHARLES M. HADFIELD (*Associate*).

To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—In my last letter to you I endeavoured to point out that the Architects' Bill was drafted upon the lines of the Medical Act, and to show broadly why this was done. The Medical Act has proved to be a success, and it is generally wise to follow a successful precedent so far as is practicable.

In particular, the machinery provided for the administration of the two measures is almost identical. In the Architects' Bill, following the precedent set in the Medical Act, the general duties of administration are vested in a General Council of paid members, appointed partly by the Privy Council, partly by the leading architectural bodies, and partly by ballot by the general body of practising architects, these last being called “direct representatives,” and necessarily taking no part in the compilation of the first Register or Roll of Practitioners, as until this is compiled there would be nobody to elect them. To properly proportion the seats upon the General Council amongst the various bodies to be represented was a task of great delicacy and difficulty, but upon this point there has been little criticism. The desirability of having a General Council at all, rather than to entrust the administration to any one existing body, was felt to be great, and the reasons are obvious. So far as the Institute is concerned, it would probably be very largely represented indeed, even to the extent of having a

preponderating vote, but, as an Institute, would not be responsible for the General Council's decisions.

In many respects the General Council would be like the Tribunal of Appeal under the London Building Act—a strong controlling influence doing admirable work, but courting little publicity, representing several interests, and subservient to none. Fair payment for attendances and travelling expenses is just, and could only operate beneficially.

The General Council would meet but rarely, it being divided into three branch councils for England, Scotland, and Ireland respectively, who would be possessed of considerable power, and upon whom much responsibility would devolve. Each would appoint a Registrar for its own district, the Registrar for England being also Registrar-in-Chief to the General Council. These officials and their clerks would compile the Registers and manage the finances, and when necessary investigate and report irregularities to the branch and General Councils, who would have power to deal with them.

Another important function to be performed by the General Council is the supervision of examinations. The only body to whom the privilege of examining is given in the Bill as at present drafted is the Institute, the examiners being paid for their services; but it is quite conceivable that at some time the Institute might refuse to act or do so inefficiently, and power is reserved under such circumstances to substitute some other body. At the same time reasonable uniformity of standard must be maintained, and that a satisfactory standard; and to ensure this, supervision is necessary, combined with the power of depriving any body of the privilege of examining if necessary. Under the extreme circumstances of no body being willing to examine satisfactorily, the Council would themselves have power to appoint examiners, after appeal to the Privy Council.

Again, sir, I find that I have written a lengthy letter, while dealing only with the administrative machinery of the Bill, and that I must defer the consideration of other equally important points to a future occasion.—Yours truly,

G. A. T. MIDDLETON.

ALLIED SOCIETIES.

LEEDS AND YORKSHIRE SOCIETY.

Architectural Education in Leeds.

The *Yorkshire Post* of the 15th inst. has the following comments upon the architectural classes held by the Leeds School of Art under the auspices of the Leeds and Yorkshire Society:—

A new work of some account in its bearing on the fabric of Yorkshire cities and towns has been initiated by the President and members of that very active body, the Leeds

and Yorkshire Architectural Society. It is the founding of an approximation to a School of Architecture in which students may fit themselves for the responsibilities of the architectural profession and prepare for the Preliminary, Intermediate, and Final Examinations of the Royal Society of British Architects. It will be noticed an "approximation" to a School of Architecture is referred to. This means that owing to lack of finances the promoters have to attain their end by devious ways, being unable to proceed by the direct path that has been taken in Manchester and Liverpool. In these two Lancashire cities Chairs of Architecture have been endowed at their respective Universities. To endow a chair at the Yorkshire College for the same purpose would require a capitalised sum equal to £400 or £500 per annum. It is impossible at the present time to raise this amount of money, and under the circumstances the Society has had recourse to the ingenious expedient of utilising existing classes at the Yorkshire College and the Leeds Institute, in conjunction with classes that are to be specially organised at the Institute, and at the Society's headquarters, to cover the whole course of architectural study.

Whilst the scheme is by no means perfect it will at least go a long way towards remedying a state of affairs that was inimical to the best interests of the profession in the area served by the Leeds and Yorkshire Society. Until Mr. Butler Wilson took office as President of the Society in 1901 there was no facility for organised study offered to the student. The architectural profession is an open one. It may be practised by any person, no matter what his qualifications, who cares to style himself an architect. But membership of the Royal Institute of British Architects, a chartered body of long standing, is of necessity by examination; and it was to encourage students to set upon themselves the hall-mark of membership that Mr. Butler Wilson put on foot the movement that has led to this composite School of Architecture.

Broadly stated, engineering subjects of which the practical architect must have knowledge are to be taught at the Yorkshire College, the preliminary course of design is to be taken at the Leeds Institute, and the advanced course of design will be taken at the Society's rooms. The authorities of both the Yorkshire College and the Leeds Institute, it should be stated, are in thorough sympathy with the ideas that have actuated Mr. Wilson and his fellow-members, and for the purpose of ensuring the classes that have been organised at the Leeds Institute the benefit of his educational experience Mr. Wilson has been co-opted a member of the committee of the Institution. The extent of the work to be undertaken by the teacher of architecture, Mr. F. Musto, at the Institute may be gauged from the syllabus that has just been prepared. Classes are provided for the whole of the subjects set in the Intermediate Examination, ranging from classic ornament to elementary applied building construction. Out of the seven subjects set in the Final Examination the Leeds Institute will provide two classes, the Yorkshire College will provide three (one being contingent on the number of students), and the Society will provide four at its rooms.

As regards Design the syllabus states that the work done will be of an entirely practical nature, the problems set and the sites worked upon being such as actually occur in practice. In each case the application of the principles of design will first be emphasised, followed by historical and modern illustrations, as a base for the students' work. The students will then work out their own ideas, and the designs will afterwards be considered collectively by the Master, and criticised by visitors

nominated by the Leeds and Yorkshire Society as follows:—

1903.	Introductory Lecture. Mr. Butler Wilson [F.]
Oct. 1.	A Country Chapel (Renaissance). Mr. C. B. Howdill [A.]
Nov. 5.	Details of Roof and Main Gable to the previous subject. Mr. G. F. Bowman.
Dec. 3.	Bank for small town. Mr. G. B. Bulmer [F.]
1904.	
Jan. 14.	Details of Front to ditto. Mr. H. S. Chorley, M.A. [A.]
Feb. 4.	Remodelling Old House, and Details of Bay Window. Mr. Butler Wilson [F.]
Mar. 3.	Oak Staircase to ditto. Mr. W. H. Thorp [F.]
April 7.	Gateway and Iron Gate to Bank. Mr. E. J. Dodgshun [F.]

THE NORTHERN ASSOCIATION.

Mr. William Glover [F.] has given £1,500 in Consols to the Northern Architectural Association, of which he is Past President. The sum of £500, with accumulated interest, may be withdrawn at a future date towards the cost of a building for the Association. The annual interest on the remainder is to be used for the Society's educational work. The hon. solicitor is preparing the necessary trust deed.

LEGAL.

Concrete Floors in London Flats.

At the West London Court recently Messrs. Flew & Son, builders, of Fulham, were summoned at the instance of Mr. F. W. Hamilton, district surveyor, for committing certain irregularities in the construction of a block of flats in Edith Villas, West Kensington. Mr. John Haynes, who supported the summons, said the Building Act required that all the floors and staircases of buildings which consisted of separate sets of chambers and offices adapted for the occupation of different persons should be constructed of fire-resisting material. In this case the defendants had simply laid down wooden joists on the ground floor, and it was most essential for the protection from fire of dwellers in such flats that that section of the Act should be rigidly enforced. The district surveyor called the attention of the builders to the irregularity, but instead of remedying the defect they went on more vigorously and completed the building. Mr. Hamilton admitted in evidence that all the upper floors of the flats were properly constructed of wooden joists filled in with concrete.—Mr. Blanco White (for the defence): You have passed other flats erected by the firm in which the ground floors have been constructed in a similar fashion to these in Edith Villas?—Witness: Yes; but my opinion was changed after the recently held meeting of the District Surveyors' Association.—The Magistrate: I suppose you had considered that concrete flooring was unnecessary on ground floors because there was no draught, as in upper floors.—Witness: That is so.—The Magistrate observed that no doubt the suddenly altered interpretation put on that section of the Act by the surveying authorities had placed the defendants and other builders in a difficulty, but the Act must be obeyed. He adjourned the case to enable the defendants to comply with the regulations.

